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ABSTRACT

In a developing country such as South Africa, many teachers enter initial teacher education with little or no experience of libraries and information sources. These students need to become information literate during their initial teacher education, otherwise they will not have the knowledge of information sources and skills which they will need if they are going to be role models for their pupils and help them to become information literate. The paper describes a project to improve the media and information skills of under-qualified teachers through in-service workshops. The process could also be used as a model for initial teacher education with students from disadvantaged or more privileged backgrounds. It is important for pupils to become information literate, but before this can happen, their teachers must themselves become information literate. Teaching style influences student learning, and must follow a clearly formulated process, like the one described. This is one way to help transform the prevailing teacher-centered and textbook-centered teaching style to an interactive teaching and learning process based on available information sources. (Contains 25 references.) (Author/SWC)

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A Transformation in Teacher Education: or How Can Disadvantaged Teachers Become Information Literate?

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Introduction

As a result of a literature survey and two empirical surveys, it has been found that subject teachers in secondary schools and lecturers in tertiary institutions should be role models for their pupils and students with regard to reading and information literacy development (Olën:1993). In a developing country such as South Africa many teachers enter initial teacher education with little or no experience of libraries and information sources. These students need to become information literate during their initial teacher education, otherwise they will not have the knowledge of information sources and skills which they will need, if they are going to be role models for their pupils and help them to become information literate.

Initial teacher education

According to the National Education Policy Investigation (NEPI) (1992:58) report on teacher education, in certain African countries, such as Mozambique, there is no, or hardly any, correspondence between what teachers learn during their initial education and what they are supposed to teach. Also very few of the new methodologies are implemented in practice, because teachers continue to dominate classroom instruction, while their pupils' activities are mostly limited to reception and reproduction. Assessment focuses narrowly on results and little attention is paid to the process of learning. As this is unsatisfactory the NEPI report suggests the need for policy instruments to support the implementation of change in practice.

Siebörger and Kenyon (1992:153) believe that if schools are going to provide pupils with more relevant education, which will better equip them with the attitudes and understanding of people and the world, the task of initial teacher education is vital. It should ensure "the transformation of the unhelpful experiences and models which student teachers bring with them from their own schooldays into more helpful ones".

Many students entering initial teacher education have never had access to school libraries. During the empirical surveys it was found that even students who had had access to school libraries made little voluntary use of either the school library or the college-university library. Their perception of the school library is chiefly instrumental - a place to get teaching aids to make lessons more interesting. Another problem is that the provision of facilities, equipment and staff in the colleges of education for African students is often very poor and so many African students leave college with a very limited knowledge of information sources and children's literature, and without having produced any materials for classroom use. Their lecturers probably do not themselves know how to produce teaching materials while there is usually also limited equipment available.

The NEPI report on teacher education suggests that teachers need to become competent, but also confident, resilient, self-reflective, and develop "a range of pedagogical and classroom management skills, and an appreciation of the central role of enquiry in both teaching and learning". Surely this means that teachers also need to be made aware of the role of the school library and become information literate during the period of initial teacher education?

An increasing number of reports and articles published in the U.K. and U.S.A stress that lecturers in colleges of education and in faculties of education at universities must promote reading and information literacy in the teaching and learning process. Information literacy is regarded as a critical literacy for an educated person who will be living and working in the 21st century. The literature also suggests that the students' information literacy should be assessed at the end of their teacher education as part of their accreditation.

How can this be achieved? Although some

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authors, notably Hall (1986), Hallein (1988), Irving (1980) and Unesco (*South Pacific Region Pilot Project* ... 1983), have suggested that all teachers should have to take a specialized course in Information studies/ skills. I personally do not believe this is the solution as students would probably resent having to take such a course. If we want to make every teacher aware of the important role of the school library then education and the school library must become relevant to each other. It is for this reason that authors, such as Bodi (1990), Miner (1989), Naito (1991), Tierney (1992), Werrell and Wesley (1990) and Wilke (1991), believe that for information literacy programs at the tertiary level to be effective they must, just as in primary and secondary school, be integrated into courses and relevant to students' needs. Information literacy programs are intensely dependent on faculty. So lecturers need to make the use of the library an inherent part of their teaching and include it as a component from the first year through to the final year when students can be surveyed to assess the extent to which they are information literate.

An increasing number of sources suggest methods for librarians to collaborate with lecturers in developing integrated courses. Although such integrated courses to develop information literacy have to be designed with the specific needs of the students and course objectives in mind, assignments, and in particular projects could be an ideal means for such collaboration.

Theory on projects

The theory on projects is vast and I intend to highlight only a few of those aspects which I consider to be particularly relevant to the situation in a developing country.

Malley (1984:43) points out that one of the most enduring tasks which school pupils have is the completion of assignments. The assignment technique is valid in all the school and tertiary education phases. "Assignment" has a broad meaning and can include any tasks which the teacher gives a pupil to do, for example, consulting a dictionary to find the meaning of a word or reading a paragraph in order to extract the key sentence (*Information Skills in the Secondary Curriculum* 1981:13). Jay (1983:15) suggests teachers can begin with smaller assignments leading into and providing experience for larger assignments.

In Marland's (1992:23) view there is a temptation for some teachers to set too large an assignment too early. He suggests that pupils might be given an assignment requiring them to locate five sources and not have to do anything with them, or they may be given five sources and asked to write a short report synthesizing certain information contained in them. According to Waterhouse (1988:74) there is nothing wrong with starting in a fairly prescriptive way. As pupils learn to work independently they can be given greater freedom to select topics which are of particular interest to them and also greater choice with regard to forms of presentation. Marland (1987:13) has also suggested that assignments can be broken down into stages. Jay (1986:32) points out that a number of short projects may result in greater learning than one lengthy project.

However assignments should sometimes include project work which has been defined as "an activity in which the learner acquires and applies knowledge and skills through practical involvement in an actual or simulated real-life problem or task" (Irving & Snape 1979:101). A project may be cross-curricular and pupils are given more time for its completion, because they are expected to consult a number of sources.

Problems with projects

Projects have often been severely criticized, because too often pupils copy information verbatim from textbooks or reference works (Edwards 1976:3; Great Britain 1975:94; Wray 1985:3). Other problem areas are that pupils may not know:

* what information to look for
* where to find the information or books that they could cope with
* how much information is required
* how to organize the information collected
* what illustrations are required
* where to find illustrations
* how to present their findings
* how to make posters
* how to make models
* how to set out or layout their presentation
* why they are doing the project

It is thus obvious that at the outset teachers must give pupils very clear and sequenced written instructions.

Teachers may also have problems with

projects as they may think of them as additional work. Many do not know

* what they are expected to achieve by setting projects for their pupils
* what skills they are supposed to be developing
* how to go about preparing a project
* how to evaluate a project

This means that teachers need a better understanding of the different types of project which can be set, the information skills required for the effective completion of each (Irving 1980:17).

Other problems may be the availability of resources. Books containing information relevant to the topic, as well as the reading ability of the pupils is a huge problem. More harm than good is done if pupils are expected to find information for which books may not be available. In many schools and homes, especially in poorer, rural areas, there is just no access to the information required. Linked to this is the problem of materials to use for recording and presenting information. Simple things like paper and cardboard, pens, pencils and crayons can be very costly and difficult to obtain especially in rural areas.

This is an area where commercial organizations or schools in more affluent countries could come to the assistance of the poorer schools in developing countries by providing project packs containing paper with lines for writing, blank paper for illustrations, pens, pencils and other stationery. Shell Education Service is one organization which makes packs available to schools in disadvantaged communities in South Africa.

In countries where school libraries and their collections are small, inadequate or even non-existent it is essential that teachers become aware of appropriate information sources and services that are available in the community or "real world". Often printed information sources are available in the community or they could be collected by the teacher from urban communities. Examples are Bibles, old newspapers or periodicals, free pamphlets and information and advertising leaflets, and even old telephone directories.

Eisenberg and Brown (1990:102) have pointed out that the new approach to information skills instruction centers on a process approach and that with the exception of Kuhlthau's information search process model none of the other frameworks or models have been empirically derived nor tested in any formal field or laboratory study. They further point out that there is a need to verify process frameworks in real settings and that it would also be desirable to base process frameworks on empirically derived models of cognition. The integrated approach to information skills teaching in the context of a subject curriculum also suffers from this same lack of empirical substantiation (Eisenberg & Brown 1990: 104).

The independent information skills project, which will now be described, provided the opportunity to verify both the process and integrated approaches.

The independent information skills project

In 1987 and 1988 a consultant (Potgieter 1993) from the Shell Education Service ran a grassroots developmental workshop, for the READ organization. It was held for English second language teachers to teach them how to use projects at three different levels in the senior primary phase, that is, in Standards 3, 4 and 5 (Grades 5, 6 and 7).

Teachers had to learn to set projects with the following aims:

* to interest pupils in finding out more about the subjects that were taught in school and found in the real world
* to expand and enrich the pupils' knowledge so that they would have clearer insight and better understanding of what information they could obtain in books, periodicals, newspapers, radio and other media
* to develop a positive attitude towards working independently
* to enable the pupils to reason and think for themselves and express themselves clearly with guidance from the teacher
* to develop the information skills necessary to locate, select, organize and present information in a systematic way
* to learn to use a variety of media (especially print media).

The teacher could achieve these aims in the following manner:

(1) By choosing a topic from the curriculum and using it to teach certain information skills (the skills are more important then the topic).

(2) Starting with a textbook (each pupil has the same one) and introducing reference books and other media gradually.

(3) Being very specific about pictures and illustrations which should only be used for a reason. Pupils need to be taught when to use different types of illustration, for example, a graph, a map, a picture, a diagram. They need to learn how to draw them or where to find them when required.

(4) Avoiding verbal instructions, but using clear, sequenced written instructions which if followed carefully will help guide the pupils through the project and ensure a successful result.

(5) Especially in the beginning, keeping the project short and working in stages. Completing one stage at a time and evaluating as the project progresses. This will ensure a series of small successes which promote enthusiasm and enjoyment.

(6) By giving the pupils regular guidance, support and encouragement to maintain their enthusiasm. The teacher needs to be very involved in the project, especially in the early stages.

(7) Using visual media to demonstrate various skills and techniques. Having these available for pupils to refer back to on their own.

(8) Providing for differentiation so that the pupils who work more quickly are kept purposefully occupied whilst slower pupils can receive more assistance.

(9) Introducing a loose page system, because then the pupils are not confronted with an intimidating book which has to be filled with information. This system allows an project to be completed in stages and the more able pupils can do more if they wish. Also it creates an opportunity to teach both presentation and bookbinding skills.

(10) Assessment (evaluation) throughout the process is important and should take into account the variety of abilities of a class of pupils. It should be positive and encourage pupils to develop their information skills and their own talents.

During the workshops teachers had to do projects and follow the same steps, described above, as pupils would be expected to follow. They could therefore experience the same pro-cess. Workshops were held for each of the three levels, but teachers had to return to school to put into practice what they had learnt before attending the following workshop. Eventually teachers, who had participated in this research project, displayed their pupils' projects. The pupils had produced a variety of pamphlets, booklets, posters, models and maps which were of a high standard.

Observations and findings

While much has been written on problems surrounding school projects, teachers still have a problem when it comes to putting this theory into practice in the classroom. Although this independent information skills project does not profess to be a perfect model or formula for project work, it enabled a group of teachers to facilitate a process for the successful development and implementation of information skills using projects in the primary school. This project also addressed a number of practical problems while several theoretical findings were successfully implemented in it. They are the following:

* Training the teachers to set their own project topics based on their subject curricula.
* The workshopping process where teachers actually followed the same process as pupils would be expected to follow and gained a better understanding of the information skills which their pupils would need to acquire.
* Working from simple information skills to more complex, and dividing each level into more manageable stages.
* Using a variety of media.
* Teaching and encouraging the use of a variety of presentation techniques.
* Training the teachers to make their own resources, for example posters, based on the workshop models.
* The focus was on the how (process) of project work and not on the "why" or "what".

By working together and exchanging ideas the teachers are encouraged to develop a more reflective, self-evaluative mindset. Improving their competence in the classroom produces results and enables the teachers to teach with confidence and authority. Pupils will benefit in the following ways:

* Pupils will enjoy doing projects if teachers are able to give them the correct direction and guidance, in order to produce an end result which is acceptable or good.
* Teachers can help pupils achieve this by working with them and guiding them through a process that helps them acquire and develop skills which will lead to independent learning.
* It is not the topic or the availability of media which determine the success of the project, but the methods, preparation and style of the teacher who is in control.
* By working in easily manageable stages or steps the pupils progress through a continuum of information skills, and build up confidence and knowledge of different strategies which they can draw upon when required to work independently.
* This in turn leads to independence and increased pupil learning, through a creative, participative and enjoyable classroom experience and improves critical thinking and information literacy.
* The project products, that is the pamphlets and collated books produced by the pupils, can be kept in the classroom collection. This serves as a motivation for pupils whose work then serves a useful purpose. It provides reading material for the pupils and models for future project work.

An observation made by the consultant (Potgieter 1993) was that the process could be started at a lower level - in Standards 1 and 2 (Grades 3 and 4) using shared reading and writing techniques. The teacher could introduce pupils to project work by making "big books". The pupils could supply the information and illustrations which initially could be used as reference books by the pupils in the classroom.

Conclusion

Although the project described and discussed in this paper was used to improve the media and information skills of underqualified teachers by means of in-service workshops, it is believed that the process could be adapted and used as a model for initial teacher education. The project described was based on didactic principles, theoretical and empirical research and could therefore be implemented either with students coming from disadvantaged backgrounds, or those from more privileged backgrounds.

It is important for pupils to become information literate, but before this can happen their teachers must themselves become information literate. Teachers in particular need to acquire the skills inherent in understanding subjects like Geography, Mathematics and Science. Lecturers' teaching styles exert an influence on their students, but these cannot be left to chance, but must follow a clearly formulated process, such as that described above. This is one way to help transform the prevailing teacher-centered and textbook-centered teaching style to an interactive teaching and learning process based on available information sources.

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